SUBJECT INDEX TO VOLUME 10

The subject index lists titles of articles, notes, and letters together with the names of their authors. Classification is based upon analyses of contents rather than upon the titles alone.

AAPT & AIP Activities
Apparatus, Demonstration
Apparatus, Laboratory
Astronomy and Astrophysics
Atomic and Molecular Physics
Awards
Book and Film Lists
Book and Film Reviews
Computers
Courses
Editorials
Education
Electricity and Magnetism
Electronics
Environment
Gravitation
Heat and Thermodynamics
History and Biography
International Physics Education
Mathematics
Measurement
Mechanics
Multi-Media Aids
Nuclear Physics
Optics
Photography
Physics and Society
Quantum Mechanics
Relativity
Sound
Stumpers
Testing
Waves

Month	*Page Nos.*
January	1-60
February	61-108
March	109-164
April	165-228
May	229-292
September	293-356
October	357-420
November	421-484
December	485-552

AAPT and AIP Activities

AAPT Elections–239
Council on Physics in Education (Newsletter) No. 1–115, No. 2–170, No. 3–238, No. 4–330, No. 5–383, No. 6–450, No. 7–508
Physics in Secondary Education (see Physics in Pre-College Education) (Newsletter), Edmund C. Bray, Ed. –200
Physics in Pre-College Education (Newsletter), Edmund C. Bray, Ed. –240, 390, 438, 514
Physics in Pre-College Education (Newsletter), Melba Phillips (Guest Editor)–326
Report of the Executive Officer, Wilbur V. Johnson–4, 66, 172
Report of the Acting Executive Officer, John Muster–237
Report of the Executive Officer, A. A. Strassenburg–322, 376, 456, 498

Astronomy and Astrophysics

Astronomy and the Armillary, Jesse Pollard–96
Determining the Distance to the Moon, David H. DeVorkin–40
Jumping Jehosaphat, Howard L. Morrison–150
Practical Fields, A. T. Mogill–471
Solar Energy – An Option for Future Energy Production, Peter E. Glaser –443
Stars and Nuclei, Oakes Ames, Part I–182, Part II–250
Erratum: Stars and Nuclei, Part II–299
Sundials, Malcom M. Thomson–117
A Synchronous Earth Satellite Problem, Samuel Derman–400

Apparatus, Demonstration

Acoustical Zone Plate, Samuel R. Scott–478
Another Newton's Sailboat (Letter), Robert J. Brown, Jr.–488
Astronomy and the Armillary, Jesse Pollard–96
Balancing, Robert N. Jones–469
Beta Energy Using Modified Millikan Apparatus, James F. Moore–47
Blowgun for the Hunter and Monkey Demonstration, Menno Fast–216
Calibrating an Inexpensive Strobe Light, Alfred M. Eich–153
Capturing the Projectile in the Monkey and Gun Demonstration–263
A Comparative Evaluation of Low Cost White Light Stroboscopes, John B. Johnston–341
Cyclones and Anticyclones on a Record Player Turntable, Marvin J. Pryor–532
Displaying Magnetic Forces Produced by Currents, James J. D'Amario and Salvatore J. Rodano–340
Doppler Effect, Using a High Frequency Buzzer, Vincent Mallette –283
Electrostatic Lobby Display, Menno Fast–100
The Frustrated Wave, Frank A. Smith, Jr.–216
Further Motivation for the Force Vector, Alfred Eich–95
Hearing the Vibrations of a Stretched Wire, John Occhuizzo–284
The Klinger Blackboard Optics Kit – An Evaluation, Howard Tokash–215
Laser Safety (Letter), C. Harry Knowles–173
Magnetically Driven Sonometer, Ronald B. Standler– 533
Mercury Vapor Street Lamps, Zygmunt Przeniczny–153
Momentum Conservation with "Hot Wheels," Allen G. Tobin–416
Neon Lamps and Static Electricity, Delbert J. Rutledge and John W. Layman–49
A New Design to Demonstrate Newton's Third Law, Steven R. Smith and Jerry D. Wilson–208
Newton's Rings, Syed Ziauddin– 477
Oscilloscope Measurement of the Velocity of Sound, Robert H. Johns –533
Pin Hole Camera, James M. Reynolds–49
Projection of Lissajous Figures Using a Laser, Tom Campbell–283
Projection Pointers, Francis S. Lestingi– 541
Projector Force Table, Thomas E. Tuschl–217
A Quick Demonstration of Newton's Third Law, Virginia F. Walters– and David D. Dreyfuss–531
Recording Timer Tape for Interference Demonstrations, Fr. Earl R. Meyer–334
Ripple Tank Projection with Improved Contrast, Robert W. Smith– 533
Rotating Vector Apparatus, David Netzorg–406
Safe Helium-Neon Lasers Advance Understanding of Light, Harry C. Knowles–69
Simple Demonstration of the Concept of the Center of Mass, Y. S. Horowitz– 464
Solid State Solar Engine, J. Jedlicka –475
Static Electricity Versus the Power Supply, Brother James Mahoney, CFX–345
Student Power, James H. Nelson– 527
Three-Dimensional Ray Tracing, George L. Hazelton and Larry Stroud–344
Transistor Radio in an Evacuated Bell Jar, Leonard Eisner–48
Two Laser Demonstrations, Donald Beaty–213
Use of a Puzzle to Teach Concepts of Circular Motion and Friction, James D. Logan– 463

Using the Overhead Projector in Simulation of the Rutherford Scattering Experiment, Rudolph J. Eichenberger –147
A Variation of the Electric Wind Experiment, Zigmunt Przeniczny –338
Velocity Measurements Outdoors with a Tape Recorder, Donald J. Pruden –49
Video Recording of Two Dimensional Motion, William J. Taffe–344

Apparatus, Laboratory

Apparatus to Measure e/m: the Manufacturer Replies to *Evaluation*, Sam Singer–407
Brownian Motion, Wallace A. Hilton– 534
Computer Simulation of Potentials Around Two Point Charges, Thomas B. Greenslade, Jr.–279
Drag Strip Timer, An Extended Use, Donald J. Pruden–100
Ealing Snap-Lock Meters, An Apparatus Evaluation, Thomas J. Caruso–405
The Electrocardiograph – Teaching Physics to Premeds, Pierre Lafrance –462
Electrocardiography for Freshmen, Harold Metcalf–98
Flexible Mirrors, Robert H. Johns–266
Inelastic Collisions Using Velcro, G. Scott Hubbard–478
Laser Beam Splitting for the Student Lab, Robert J. Julian–101
Macalaster Michelson Interferometer – An Evaluation, Stephen W. Clark –281
The Measurement of "*g*" in an Elevator, Haym Kruglak– 466
The Poisson Distribution, M. S. Lafleur, P. F. Hinrichsen, P. C. Landry, and R. B. Moore–314
Predicting the Range of a Spring Cannon, William E. Cooper–94
π and Other Things, George L. Hazelton–209
Pith Ball Substitute, Alfred Romer–477
Producing Flame Spectra, H.L. Armstrong– 527
Reply of Apparatus Designer, T. Walley Williams–406
Rolling Spool Experiment, J. Thomas Dickinson–210
Spark Timing for the PSSC Momentum Experiment, B. G. Eaton and R. A. Armstrong–155
Stable Platform, Herman L. Detweiler and Gary Kessler–477
Studying the Brain's Alpha Wave Patterns in a High School Laboratory, Peter S. Givin, Jr.–93
Tensiometer, Julius H. Taylor– 478
Two Experiments for the Introductory Physics Laboratory, Marvin L. DeJong–267

Atomic and Molecular Physics

An Illuminating Fad (Letter), Dwight Williamson– 426
Presenting the Atom: Simplification or Accuracy? (Letter), Lucille B. Garmon–114
Red Lights and Quantum Numbers, George L. Strobel–209

Awards

The 1973 AAPT Apparatus Competition (Announcement)–398
AAPT Innovative Teaching Award Winners Receive $500 Prizes–214
AAPT Distinguished Service Citations –257
Award Program for Secondary School Physics Teachers (Announcement) –116
Millikan Lecture Award (1972) to Arnold A. Strassenburg–313
Third Biennial Film Competition Winners–244

Book and Film Lists

A Classification of Elementary Physics Textbooks, Ira M. Freeman–148
NASA Releases Film on "Skylab,"–412
Physics for Poets, Pianists and Philosophers, Hans S. Plendl–273

Book and Film Reviews

Adventures in Experimental Physics (periodical). Reviewed by Lester G. Paldy–353
Applied Physics, Herman W. Pollock. Reviewed by Walter E. Massey–158
Basic Programming, John G. Kemeny and Thomas Kurtz. Reviewed by Anthony Feliu–103
Calculations in Fundamental Physics (Vol. 2: Electricity and Magnetism), Trevor Heddle. Reviewed by Reuben Benumof–105
Computers and Computation: Readings from Scientific American. Edited by Robert R. Fenichel and Joseph Weizenbaum. Reviewed by John R. Merrill– 540
Contemporary Physics: An Introduction for the Nonscientist, Jerome Pine (Preliminary review)–411
Dictionary of Scientific Biography, Charles Coulston Gillispie, Editor in Chief. Reviewed by Stephen G. Brush–158
Einstein – The Life and Times, Ronald W. Clark. Reviewed by R. S. Shankland–362
Elements of Physical Science: The Nature of Matter and Energy, Verne H. Booth. Reviewed by Robert Gardner–353
The Ethereal Ether: A History of the Michelson-Morley-Miller Experiments 1880-1930, Loyd S. Swenson, Jr. Reviewed by Robert S. Shankland–408
General Physics, G. J. Aitchison. Reviewed by Mario Iona–107
The Great American Bomb Machine. Roger Rapoport. Reviewed by James Fucini–538
History in the Teaching of Physics. Stephen G. Brush and Allen L. King. Reviewed by Raymond J. Seeger– 536
Ideas and Investigations in Physical Science, Malvin S. Dolmatz and Harry K. Wong. Reviewed by Frank R. Pomilla, Martin S. Spergel and Lester Siegel–51
The Indefinite Integral, G. M. Fichtenholz. Reviewed by Douglas E. Scott–223
Investigating Science with Paper, Laurence B. White, Jr. Reviewed by Robert F. Neff–103
The Lever and the Pulley, Hal Hellman. Reviewed by Edmund C. Bray–354
Mathematical Preparation for General Physics, J. B. Marion and R. C. Davidson. Reviewed by Richard A. Marble–481
Mechanics I – Statics, Dynamics, and Kinematics, Robert L. Stearns. Reviewed by Harold Metcalf–160
The Method of Science, R. Harré. Reviewed by Michael J. Bernstein –410
New Trends in Integrated Science Teaching Vol. I (1969-70), UNESCO. Reviewed by Robert Gardner–222
Overskill: The Decline of Technology in Modern Civilization, Eugene S. Schwartz. Reviewed by Steve Rasmussen–410
Patient Earth, John Harte and Robert Socolow. Reviewed by Albert E. Moyer–223
Plasma Dynamics, Ben Bova. Reviewed by Hassan F. Zandy–105
Powers of Ten, (16 mm film), Charles Eames. Reviewed by Robert F. Neff–52
Physical Science, F. Bueche. (Preliminary Review)–411
Physics – A Discovery Approach, Steve Edwards. Reviewed by Robert Sears, Jr.–160
Physics, A Descriptive Analysis. Alfred J. Reed. Reviewed by Alfred Romer– 538
Physics: An Ebb and Flow of Ideas, Stuart J. Inglis. Reviewed by Peter Fong–409
Physics Demonstration Experiments, Harry F. Meiners. Reviewed by Herbert H. Gottlieb– 482
Physics for the Liberal Arts Student, David S. Saxon and William B. Fretter. Reviewed by Robert L. Lehrman–222
Physics for Society, W. B. Phillips. (Preliminary Review)–411
Physics - Once Over - Lightly, Kenneth R. Atkins. (Preliminary Review)–411
Physics: The Behavior of Particles, Philip Stehle. Reviewed by Robert L. Weber–162
Radical School Reform, Beatrice and Ronald Gross, editors. Reviewed by Cary I. Sneider–102

Revolutions in Physics, Barry M. Casper and Richard J. Noer. Reviewed by Herbert Priestley–481
Science and the Future of Man, Robert L. Carovillano and James W. Skehan, S. J., editors. Reviewed by Alexander Efron–103
Science Experiments for the Space Age, Sam Rosenfeld. Reviewed by Robert Gardner–480
Selected Writings of Hermann Von Helmholtz, Russell Kahl, editor. Reviewed by Stephen G. Brush–288
Seminar on the Teaching of Physics in Schools, Soren Sikjaer, editor. Reviewed by Thomas D. Miner–353
The Stars in Their Courses, Isaac Asimov. Reviewed by Mathew P. P.–Thekaekara–160
The Stars: Their Structure and Evolution, R. J. Taylor. Reviewed by Mark R. Chartrand III–409
The Story of Radioactivity, Ann Stepp. Reviewed by Eva D. Bready–480
Teaching Physics – An Insoluble Task? Sanborn C. Brown, F. J. Kedves, and E. J. Wenham, editors. Reviewed by Thomas D. Miner–287
This Blue Planet, Charlotte Ward. Reviewed by Eva D. Bready–480
The World of Physics, R. Hulsizer and D. Lazarus. Reviewed by Richard A. Marble–224

Computers

Analog Computer Simulations in H. S. Science Courses, Thomas Liao–245
Computer Simulation of Potentials Around Two Point Charges, Thomas B. Greenslade, Jr.–279
Computer Terminals in the High School Physics Classroom, Anthony C. Caggiano–336
One Instructional Use of the Computer, Richard J. Mihm and Marilyn P. Milsop–470

Courses

The Advanced Placement Program in Physics, Raymond E. Thompson, Edward J. Finn and Robert J. Pasquesi–391
Combining Mathematics and Physics in High School, Harry Manos–385
A Different "Discovery" Approach, Cary I. Sneider–327
ECCP and the Urban Student: An Activities Approach, Paul E. Gard – 459
Electronics for Speech Majors, Richard V. Mancuso–34
Experimental Physics Course for Prospective Elementary School Teachers, Ronald G. Good–268
High School Physics Curriculum Development in the Philippines, Robert E. Chesley and Segundo Roxas–128
The Man-Made World (Modified): Modeling Population, Murray Spindel–335
Mini Physics at South Missouri State College, Kenneth A. Soxman–339
A More Meaningful College Physics Laboratory for Nonscience Majors, Randolph A. DeWitt–211
"Musical Sound" – A Course for Nonscience Majors, Elizabeth S. Ivey and Jess J. Josephs–140
Phenomenological Physics – Maine Township H. S. West Style, Rollin D. Porter–193
Physics 5: An Experiment in Teaching, Roy R. Lewis–149
Physics Just for Fun – An Individualized Course Using Harvard Project Physics, John G. Payne–138
A Physics-Oriented College Motivation Program for Minority Students, Willard R. Chappell and James F. Baur–188
Teaching the Physics of a Radio to High School Students, M. A. Jensen–125
The Technological Approach, E. J. Wigley–8

Editorials

The Mystery of Mastery (Editorial), Clifford Swartz–428
Physics–Where the Least Action Is, Clifford Swartz–516
Revealed Truth by the Editor on Certain Subtle Points, Clifford Swartz–367
Summer Thoughts for Fall Reading, Clifford Swartz–302
A Thirty Million Dollar Misunderstanding, Lester G. Paldy–7

Education

The Advanced Placement Program in Physics, Raymond E. Thompson, Edward J. Finn and Robert J. Pasquesi–391
Ask the Right Question, (Letter), T. H. Ansbacher–363
Backwards Clock, Thomas W. Norton –401
Bring Home the Bacon, Charlie Brown, John Klimas–90
A Classification of Elementary Physics Textbooks, Ira M. Freeman–148
The Column Editor Replies (Letter in reply to John E. Williams, *et al.*) Mario Iona–299
Combining Mathematics and Physics in High School, Harry Manos–385
Computer Terminals in the High School Physics Classroom, Anthony C. Caggiano–336
Conceptual Physics, Paul G. Hewitt–515
Contracting Physics, Michael Grote–461
Cooperation and Competition (Letter), Leo L. Baggerly–68
A Different "Discovery" Approach, Cary I. Sneider–327
Do Our Students Learn to Use the Experimental Method? A. Z. Hendel–264
ECCP and the Urban Student: An Activities Approach, Paul E. Gard –459
The Evolution of Physics Teaching, A.A. Strassenburg– 509
Folklore in the Classroom (Letter), Richard L. Bowman–174
Fun and Spirit: The Universal Relevance of Hard-Core Science, Elizabeth A. Wood–241
A Group Effort in Physics, Yvette A. VanHise–272
Imaginative Teaching Wanted? (Letter), Paul H. Baldwin–68
Interrelationships of Science and Society – A High School Teacher Institute, Herbert Priestley–261
Ionization Energy, Walter Thumm–507
Is Memorization an Assist? (Letter), John Pope–235
Managing Self-Paced Physics Courses, Allen J. Cohen–206
The Man-Made World (Modified): Modeling Population, Murray Spindel–335
Media Programmed Learning Systems, Lucius Butler and Kazuo Inoue–20
"Millergrams" in the Lab, J. Thomas Dickinson–39
Mini Physics at South Missouri State College, Kenneth A. Soxman–339
Models and Analogs (Letter), H. L. Armstrong–298
Models (Letter), Ira M. Freeman–114
"Musical Sound" – A Course for Nonscience Majors, Elizabeth S. Ivey and Jess J. Josephs–140
Phenomenological Physics - Maine Township H. S. West Style, Rollin D. Porter–193
Perhaps a Difference of Degree Rather Than Kind? (Reply to A. T. Mogill), Elizabeth A. Wood–364
Physics 5: An Experiment in Teaching, Roy R. Lewis–149
The Physics Background of College Freshmen Ten Years After Sputnik, Haym Kruglak–331
"Physics is Phun" Quiz, James H. Nelson–43
Physics Just for Fun – An Individualized Course Using Harvard Project Physics, John G. Payne–138
A Physics-Oriented College Motivation Program for Minority Students, Willard R. Chappell and James F. Baur–188
Physics Teachers and Programs (Letter), Gerald Piché –235
Physics Teaching: An Alternate Method, Timothy J. Schwob–98
Poetry? (Letter), C. A. Eckroth–234
Presenting the Atom: Simplification or Accuracy? (Letter), Lucille B. Garmon–114
Questions Some Students Ask – E-M Radiation, Walter Thumm–226
Science for a Precious Few (Letter),

A. T. Mogill–363
Simulation of Experiments, Peter Dean –204
Something Old, Something New (Letter), Philip Morrison–67
Special Relativity and High Temperature, Walter Thumm–507
Student Research in Introductory Physics, J. R. Wayland–202
Teaching the Physics of a Radio to High School Students, M. A. Jensen–125
Term Projects in the Introductory Physics Lab, Jack L. Flinner and Wallace C. Giffen–86
They Can Have Any Color They Want As Long As It's Black, (Letter), A. T. Mogill–426
To "Up" Enrollment (Letter), A. T. Mogill–234
Training Science Teachers for the Inner City: The ICTOS Program at Brown University, Walter E. Massey and Herman F. Eschenbacher–80
Transformers, Walter Thumm–384
Use Those Footnotes (Letter), Stewart Brekke–5
Women's Lib and Physics, Betsy Ancker-Johnson– 499
Would You Believe . . .?, Mario Iona –46, 152, 224, 249, 397, 474,
Would You Believe They Didn't Believe? (Letter), John E. Williams, Frederick E. Trinklein, H. Clark Metcalfe, Ralph W. Lefler–298

Electricity and Magnetism

Battery Data Available (Letter), J.S. Huebner– 488
Displaying Magnetic Forces Produced by Currents, James J. D'Amario and Salvatore J. Rodano–340
Electrical Figures, Colin Pounder–468
Electrostatic Lobby Display, Menno Fast–100
Neon Lamps and Static Electricity, John W. Layman and Delbert J. Rutledge–49
Pith Ball Substitute, Alfred Romer–477
A Poem on the Millikan Oil Drop Apparatus, Roger K. Weber–155
Practical Fields, A. T. Mogill–471
Questions Students Ask - Magnets and Keepers, Walter Thumm–483
Relating Heat and Electrical Units with Immersion Heaters, Samuel C. Dickieson–268
Rotating Vector Apparatus, David Netzorg–406
Static Electricity Versus the Power Supply, Brother James Mahoney, CFX–345
A Variation of the Electric Wind Experiment, Zygmunt Przeniczny–338

Electronics

Electronics for Speech Majors, Richard V. Mancuso–34
The Perpetual Light (Letter), Earl M. Sawyer–362

Gravitation

A Background to Newtonian Gravitation, V. V. Raman– 439
Practical Fields, A. T. Mogill– 471

Heat and Thermodynamics

Ask the *Right* Question (Letter), T. H. Ansbacher–363
Pocket Vacuum Chamber, Lars Broman –406
The Pressure of an Ideal Gas in a Sphere, Charles A. Bordner, Jr.–205
Questions Some Students Ask: Which Freezes Faster, Hot or Cold Water? Walter Thumm–280
Relating Heat and Electrical Units with Immersion Heaters, Samuel C. Dickinson–268
A Sequel to the PSNS Specific Heat Experiment, Ronald F. Gleeson– 399
Solar Energy – An Option for Future Energy Production, Peter E. Glaser –443
Solid State Solar Engine, J. Jedlicka –475
Would You Believe . . .?, Mario Iona– 397

History and Biography

An Apostle of Science Visits America, Katherine Sopka–369
. . . and more, (Letter), F. James Rutherford–300
Brief Chronologies which illustrate the historical development of measurement techniques, apparatus, and standards, Part I, Paul A. Bender–
Happy Birthday (Letter), John L. Roeder– 427
How Did Archimedes Solve King Hiero's Crown Problem?, Lillian Hartmann Hoddeson–14
An Impulsive Reply (Letter in reply to Mario Iona), V. V. Raman–301
Oops . . . ! (Letter), C. A. Randall –300
Physics Experiments of Yesterday, Syed Ziauddin–530
Some Salient Sources for Shooting Slides on Science (History), Francis S. Lestingi–57
Towards the Annus Mirabilis: Nuclear Physics Before 1932, Daniel J. Kevles–175
What Was Newton's Motive? (Letter), Mario Iona–300
A Background to Newtonian Gravitation, V. V. Raman–439
The Leaning Tower of Pisa Experiment, V. V. Raman–196
The Second Law of Motion and Newton's Equations, V. V. Raman–136
Where Credit is Due (Letter), Sumner Richards–235

International Physics Education

High School Physics Curriculum Development in the Philippines, Robert E. Chesley and Segundo Roxas–128
On Her Majesty's Service, J. Robert Walker–303
Opportunity for International Cooperation (Letter), U. S. Nigama–234
Teaching Physics in Hawaii, Edward Arrigoni–143

Mathematics

Combining Mathematics and Physics in High School, Harry Manos–385
Is There a Sherlock Around? (Letter), Lewis Epstein–174
Log-Log Plotting as a Tool in High School Physics, M. P. Barrick – 37
Versatility of the Screw Nail Approach to Cross Products, W. E. Greig–263

Measurement

Calibrating an Inexpensive Strobe Light, Alfred M. Eich–153
Velocity Measurements Outdoors with a Tape Recorder, Donald J. Pruden–49

Mechanics

Another Way to Jump to the Conclusion (Letter), Robert P. Bauman–364
Auto Braking System, Ronnie D. Vinson– 528
Balancing, Robert N. Jones– 469
Bernoulli and Newton in Fluid Mechanics, Norman Smith– 451
Blowgun for the Hunter and Monkey Demonstration, Menno Fast–216
Floating Objects (Letter), Richard A. Marble–67
The Force on a Surface by a Stream of Falling Water, Robert E. Vermillion– 526
Further Motivation for the Force Vector, Alfred Eich–95
Geometric Proof of the Maximum Range Equation for a Projectile Over Level Ground, C. A. Eckroth –465
Happy Birthday (Letter), John L. Roeder– 427
How Simple Is Simple? (Letter), Carl H. Hayn–488
Humpty Dumpty Had a Great Fall (Letter), Robert P. Barrett–5
An Impulsive Reply (Letter, reply to Mario Iona), V. V. Raman–301
Inelastic Collisions Using Velcro, G. Scott Hubbard– 478
Jumping Jehosaphat, Howard L. Morrison–150
The Measurement of "*g*" in an Elevator, Haym Kruglak– 468
Momentum Conservation with "Hot Wheels," Allen G. Tobin–416
More Weighty Comments (Letter), Claudio Gonzalez–362
A New Design to Demonstrate Newton's Third Law, Steven R. Smith, and Jerry D. Wilson–208
Newton's Sailboat (Letter), Jerry

D. Wilson–300
Not-So-Free Fall, John E. Gribbin–122
Not Such a Hard Bump . . .? (Letter), Gary D. Gordon–6
On D'Alembert's "Principle," Eli Metzger (see also Maor, Eli)–97
On the Derivation of the Centripetal Acceleration Formula, Ernest Zebrowski, Jr.– 529
Physics Fun: a 24-hour Race, Gary L. Bushman, F. Darrell Goar and Wes L. Johnson–402
The Physics of Ski Turns, John I. Shonle and Douglas L. Nordick– 491
Possible Source of Error When Using the Kater Pendulum, H. J. Born and K. E. Jesse– 466
Predicting the Range of a Spring Cannon, William E. Cooper–94
Projector Force Table, Thomas E. Tuschl–217
A Repertoire of S. H. M., Eli Maor (see also Metzger, Eli)–377
Reply to Letters of Wolfe and O'Farrell (Letter), Mario Iona–6
Rolling Spool Experiment, J. Thomas Dickinson–210
Rolling Spool Experiment (Letter), William P. Boudreau–427
Simple Demonstration of the Concept of the Center of Mass, Y. S. Horowitz–464
Spark Timing for the PSSC Momentum Experiment, B. G. Eaton and R. A. Armstrong–155
Stable Platform, Herman L. Detweiler and Gary Kessler– 477
A Synchronous Earth Satellite Problem, Samuel Derman–400
Tensiometer, Julius H. Taylor– 478
Units of Weight (Letter), S. O'Farrell–5
Use of a Puzzle to Teach Concepts of Circular Motion and Friction, James D. Logan– 463
Video Recording of Two Dimensional Motion, William J. Taffe–344
Weight in Newtons – Mass in Kilograms (Letter), Hugh C. Wolfe–5
What Was Newton's Motive? (Letter), Mario Iona–300
Where Credit is Due: The Leaning Tower of Pisa Experiment, V. V. Raman–1961, The Second Law of Motion and Newton's Equations, V. V. Raman–136
Which Way is Up? Albert A. Bartlett– 429
Would You Believe . . .?, Mario Iona–46, 152, 224, 249, 397, 474, 535

Multi-Media Aids

Cartoon Slides, Anyone? (Letter), Paul E. Little and Karl F. Kuhn–301
Media Programmed Learning Systems, Lucius Butler and Kazuo Inoue–20
Some Salient Sources for Shooting Slides on Science (History), Francis S. Lestingi–57

Nuclear Physics

Beta Energy Using Modified Millikan Apparatus, James F. Moore–47
Convenient Absorbers for Beta Shielding Experiments, Forrest I. Glick –39
Nuclear Cross Sections, Ludwik Kowalski–132
The Nucleus as a Spinning Top, Victor W. Cohen–24
Simulated Radioactivity, James L. Boettler–403
Ultralow Temperature Nuclear Physics, James R. Sites–75
Using the Overhead Projector in Simulation of the Rutherford Scattering Experiment, Rudolph J. Eichenberger–147
Would You Believe . . .? Mario Iona –224

Optics

Flexible Mirrors, Robert H. Johns–266
The Klinger Blackboard Optics Kit – An Evaluation, Howard Tokosh–215
Laser Beam Splitting for the Student Lab, Robert J. Julian–101
Laser Interference by a Convex Mirror, Brother James Mahoney, CFX–406
Laser Safety (Letter), C. Harry Knowles–173
Macalaster Michelson Interferometer – An Evaluation, Stephen W. Clark –281
Newton's Rings, Syed Ziauddin–477
Pin Hole Camera, James M. Reynolds –49
Questions Some Students Ask – Mirror Reflections, Walter Thumm–346
Ray Diagrams for a Virtual Object, John J. White III–33
Safe Helium-Neon Lasers Advance Understanding of Light, Harry C. Knowles–69
Schlieren Apparatus, Wallace A. Hilton–36
Three Dimensional Ray Tracing, George L. Hazelton and Larry Stroud–344

Photography

A Lightning Catch (Letter), Brainard L. Patton–174
A Simple Camera-Panning Device, Bruce G. Eaton– 472
Surface Screening (Letter), Elizabeth A. Wood– 455

Physics and Society

Physics Gets People Together (Letter), Robert P. Barrett–363

Quantum Mechanics

Red Lights and Quantum Numbers, George L. Strobel–209

Relativity

Photon's Mass and Division by Zero (Letter), Joseph Giarratano–174

Sound

Acoustical Zone Plate, Samuel R. Scott–478
The Geometry of the Sound Field of a Gun, Eli Metzger (see also Maor, Eli)–146
Oscilloscope Measurement of the Velocity of Sound, Robert H. Johns–
A "Sound" Crossword, Veralee Falkenberg–44
Transistor Radio in an Evacuated Bell Jar, Leonard Eisner–49

Stumpers

Stumpers! Sr. Mary Jo Rosenau–382

Testing

Is Physics A Laughing Matter? Richard C. Adams–265
Let the Students Write the Exam, Barbara K. Lunde and James Jones–270
More On True-False (Letter), John A. Fynn– 455

Waves

Comments About Single Slit Diffraction, Mario Iona–323
Dakin's Crazy Interferometer, Lewis Epstein–213
Demonstrating Doppler Radar, Richard W. Cole–399
The Frustrated Wave, Frank A. Smith, Jr.–216
Lighter Side of Teaching Physics (Letter), Dinah Moche– 427
Newton's Rings, Syed Ziauddin– 475
Recording Timer Tape for Interference Demonstrations, Fr. Earl R. Meyer –334
Two Laser Demonstrations, Donald Beaty–213

AUTHOR INDEX TO VOLUME 10

Abbas, Sallie W. Physics Phunnies–516
Adams, Richard C. Is Physics a Laughing Matter?–265
Ames, Oakes. Stars and Nuclei Part I-182; Part II–250
Ancker-Johnson, Betsy. Women's Lib and Physics–499
Ansbacher, T.H. Ask the *Right* Question (Letter)–363
Armstrong, H.L. Models and Analogs (Letter)–298
Producing Flame Spectra –527
Armstrong, R.A. (with B.G. Eaton) Spark Timing for the PSSC Momentum Experiment–155
Arrigoni, Edward. Teaching Physics in Hawaii–143
Baggerly, Leo L. Cooperation *and* Competition (Letter)–68
Baldwin, Paul H. Imaginative Teaching Wanted? (Letter)–68
Barrett, Robert P. Humpty Dumpty Had A Great Fall (Letter)–5
Physics Gets People Together (Letter)–363
Barrick, M. P. Log - Log Plotting as a Tool in High School Physics–37
Bartlett, Albert A. Which Way is Up?–429
Bauman, Robert P. Another Way to Jump to the Conclusion (Letter)–364
Baur, James F. (with Chappell, Willard R.) A Physics-Oriented College Motivation Program for Minority Students–188
Beaty, Donald. Two Laser Demonstrations–213
Benumof, Reuben. Review of Trevor Heddle, Calculations in Fundamental Physics–105
Bernstein, Michael. Review of R. Harré, *The Method of Science*–410
Boettler, James L. Simulated Radioactivity–403
Bordner, Charles A., Jr. The Pressure of an Ideal Gas in a Sphere–205
Born, H. J. (with K. E. Jesse) Possible Source of Error When Using the Kater Pendulum–466
Boudreau, William P. Rolling Spool Experiment (Letter)–427
Bowman, Richard L. Folk Lore in the Classroom (Letter)–174
Bray, Edmund C. Physics in Secondary Education (Letter)–200
Physics in Pre-College Education Newsletter, #2–240; #4–390; #5–438, 6–514
Review of Hal Hellman, *The Lever and the Pulley*–354
Bready, Eva D. Review of Ann Stepp, *The Story of Radioactivity*–480
Review of Charlotte Ward, *This Blue Planet*–480
Brekke, Stewart. Use Those Footnotes (Letter)–5
Broman, Lars. Pocket Vacuum Chamber–406
Brown, Jr., Robert J. (Letter) Another Newton's Sailboat–488
Brush, Stephen G. Review of Charles Coulston Gillispie, Editor in Chief, *Dictionary of Scientific Biography*–158
Review of Russell Kahl, Ed. *Selected Writings of Hermann Von Helmholtz*–288
Bushman, Gary L. (with F. Darrell Goar and Wes L. Johnson) Physics Fun: a 24-Hour Race–402
Butler, Lucius. (with Inoue, Kazuo) Media Programmed Learning Systems–20
Caggiano, Anthony C. Computer Terminals in the High School Physics Classroom–336
Campbell, Tom. Projection of Lissajous Figures Using a Laser–283
Caruso, Thomas J. Ealing Snap-Lock Meters, An Apparatus Evaluation–405
Chappell, Willard R. (with James F. Baur) A Physics-Oriented College Motivation Program for Minority Students–188
Chartrand, Mark R., III. Review of R. J. Taylor, *The Stars: Their Structure and Evolution*–409
Chesley, Robert E. (with Segundo Roxas) High School Physics Curriculum Development in the Philippines–128
Clark, Stephen W. Macalaster Michelson Interferometer – An Evaluation–281
Cohen, Allen J. Managing Self-Paced Physics Courses–206
Cohen, Victor W. The Nucleus as a Spinning Top–24
Cole, Richard W. Demonstrating Doppler Radar–399
Cooper, William E. Predicting the Range of a Spring Cannon–94
D'Amario, James J. (with Salvatore J. Rodano) Displaying Magnetic Forces Produced by Currents–340
Dean, Peter. Simulation of Experiments–204
DeJong, Marvin L. Two Experiments for the Introductory Physics Laboratory–267
Derman, Samuel. A Synchronous Earth Satellite Problem–400
Detweiler, Herman L. (with Gary Kessler) Stable Platform–477
DeVorkin, David H. Determining the Distance to the Moon–40
DeWitt, Randolph A. A More Meaningful College Physics Laboratory for Nonscience Majors–211
Dickieson, Samuel C. Relating Heat and Electrical Units With Immersion Heaters–268
Dickinson, J. Thomas. "Millergrams" in the Lab–39
Rolling Spool Experiment–210
Dreyfuss, David D. (with Virginia F. Walters). A Quick Demonstration of Newton's Third Law–531
Eaton, B. G. (with R. A. Armstrong) Spark Timing for the PSSC Momentum Experiment–155
Eaton, Bruce G. A Simple Camera-Panning Device–472
Eckroth, C. A. Poetry? (Letter)–234
Geometric Proof of the Maximum Range Equation for a Projectile Over Level Ground–465
Efron, Alexander. Review of R. L. Caronillano and James W. Skehan, Eds., *Science and the Future*–103
Eich, Alfred M. Calibrating an Inexpensive Strobe Light–153
Further Motivation for the Force Vector–95
Eichenberger, Rudolph J. Using the Overhead Projector in Simulation of the Rutherford Scattering Experiment–147
Eisner, Leonard. Transistor Radio in an Evacuated Bell Jar–48
Epstein, Lewis. Dakin's Crazy Interferometer–213
Is There a Sherlock Around–174
Eschenbacher, Herman F. (with Massey Walter E.) Training Science Teachers for the Inner City: The ICTOS Program at Brown University–80
Falkenberg, Veralee. A "Sound" Crossword–44
Fast, Menno. Electrostatic Lobby Display–100
Blowgun for the Hunter and Monkey Demonstration–216
Feliu, Anthony. Review of John G. Kemeny and Thomas E. Kurtz, *Basic Programming*–103
Finn, Edward J. (with Robert J. Pasquesi and Raymond E. Thompson) The Advanced Placement Program in Physics–391
Flinner, Jack L. (with Giffen, Wallace C.) Term Projects in the Introductory Physics Lab–86
Freeman, Ira M. Models (Letter)–114
A Classification of Elementary Physics Textbooks–148
Fong, Peter. Review of Stuart J. Inglis, *Physics: An Ebb and Flow of Ideas*–409
Foster, Howard. CPE (Newsletter #4)–330
Fucini, James. Review of *The Great American Bomb Machine:* Roger Rapoport–538
Fynn, John A. More on True-False (Letter)–455

Gard, Paul E. ECCP and the Urban Student: An Activities Approach – 459
Gardner, Robert. Review of *New Trends in Integrated Science Teaching, Vol. I (1969-70),* UNESCO – 222
Review of Verne H. Booth, *Elements of Physical Science: The Nature of Matter and Energy* – 353
Review of Sam Rosenfeld, *Science Experiments for the Space Age* – 480
Garmon, Lucille B. Presenting the Atom: Simplification or Accuracy - (Letter) – 114
Giarratano, Joseph. Photon's Mass and Division by Zero (Letter) – 174
Giffen, Wallace C. (with Flinner, Jack L.) Term Projects in the Introductory Physics Lab – 86
Given, Peter S., Jr. Studying the Brain's Alpha Wave Patterns in a High School Laboratory – 93
Glaser, Peter E. Solar Energy – An Option for Future Energy Production – 443
Gleeson, Ronald F. A Sequel to the PSNS Specific Heat Experiment – 399
Glick, Forrest I. Convenient Absorbers for Beta Shielding Experiments – 39
Goar, F. Darrell (with Gary F. Bushman and Wes L. Johnson) Physics Fun: a 24-Hour Race – 402
Gonzalez, Claudio. More Weighty Comments (Letter) – 362
Good, Ronald G. Experimental Physics Course for Prospective Elementary School Teachers – 268
Gordon, Gary D. Not Such a Hard Bump ... ? (Letter) – 6
Gottlieb, Herbert H. Review of Harry F. Meiners, *Physics Demonstration Experiments* – 482
Greenslade, Thomas B., Jr. Computer Simulation of Potentials Around Two Point Charges – 279
Greig, W. E. Versatility of the Screw Nail Approach to Cross Products – 263
Gribbin, John E. Not-So-Free Fall – 122
Grote, Michael. Contracting Physics – 461
Haym, Carl H. (Letter) How Simple Is Simple? – 488
Hazelton, George L. π and Other Things – 209
Hazelton, George L. (with Larry Stroud) Three Dimensional Ray Tracing – 344
Hendel, A. Z. Do Our Students Learn to Use the Experimental Method? – 264
Hewitt, Paul G. Conceptual Physics – 515
Hilton, Wallace A. Schlieren Apparatus – 36
Brownian Motion – 534
Hinrichsen, P. F. (with M. S. Lafluer, C. Landry and R. B. Moore) The Poisson Distribution – 314
Hoddeson, Lillian Hartmann. How Did Archimedes Solve King Hiero's Crown Problem? – 14
Horowitz, Y. S. Simple Demonstration of the Concept of Center of Mass – 464
Hubbard, Scott. Inelastic Collisions Using Velcro – 478
Huebner, J.S. (Letter) Battery Data Available – 488
Inoue, Kazuo (with Butler, Lucius) Media Programmed Learning Systems – 20
Iona, Mario. Reply to Letter of Wolfe and O'Farrell (Letter) – 6
Review of G. J. Aitchison, *General Physics* – 107
The Column Editor Replies (Letter, reply to John E. Williams, et al.) – 299
What Was Newton's Motive? (Letter) – 300
Comments About Single Slit Diffraction – 323
Would You Believe . . . ? – 46, 152, 224, 397, 474, 535
Ivey, Elizabeth S. (with Jess J. Josephs) "Musical Sound" – A Course for Nonscience Majors – 140
Jedlick, J. Solid State Solar Engine – 475
Jensen, M. A. Teaching the Physics of a Radio to High School Students – 125
Jesse, K. E. (with H. J. Born) Possible Source of Error When Using the Kater Pendulum – 466
Johns, Robert H. Flexible Mirrors – 266
Oscilloscope Measurement of the Velocity of Sound – 533
Johnson, Wes L. (with Gary F. Bushman and F. Darrell Goar) Physics Fun: a 24-Hour Race – 402
Johnson, Wilbur V. Report of the Executive Officer – 4, 66, 172
Johnston, John B. A Comparative Evaluation of Low Cost White Light Stroboscopes – 341
Jones, James (with Lunde, Barbara K.) Let the Students Write the Exam – 270
Jones, Robert N. Balancing – 469
Josephs, Jess J. (with Elizabeth S. Ivey) "Musical Sound" – A Course for Nonscience Majors – 140
Jossem, Leonard F. CPE Newsletter – 508
Julian, Robert J. Laser Beam Splitting for the Student Lab – 101
Kessler, Gary (with Herman L. Detweiler) Stable Platform – 477
Kevles, Daniel J. Towards the Annus Mirabilis: Nuclear Physics Before 1932 – 175
Klimas, John. Bring Home the Bacon, Charlie Brown – 90
Knowles, C. Harry. Safe Helium - Neon Lasers – 69
Laser Safety (Letter) – 173
Kowalski, Ludwik. Nuclear Cross Sections – 132
Kruglak, Haym. The Physics Background of College Freshmen Ten Years After Sputnik – 331
The Measurement of "g" in an Elevator – 466
Kuhn, Karl F. (with Paul E. Little) Cartoon Slides, Anyone? (Letter) – 301
Lafleur, M. S. (with P. F. Hinrichsen, P. C. Landry, and R. B. Moore) The Poisson Distribution – 314
Lafrance, Pierre. The Electrocardiograph – Teaching Physics to Premeds – 462
Landry, P. C. (with M. S. Lafleur, P. F. Hinrichsen and R. B. Moore) The Poisson Distribution – 314
Layman, John W. (with Rutledge, Delbert) Neon Lamps and Static Electricity – 49
Lefler, Ralph W. (with John E. Williams, Frederick E. Trinklein, H. Clark Metcalfe) Would You Believe They Didn't Believe (Letter) – 298
Lehrman, Robert L. Review of David S. Saxon and William B. Fretter, *Physics for the Liberal Arts Student* – 222
Lestingi, Francis S. Projection Pointers – Holly and Hollerith – 541
Some Salient Sources for Shooting Slides on Science (History) – 57
Lewis, Roy R. Physics 5: An Experiment in Teaching – 149
Liao, Thomas. Analog Computer Simulations in H. S. Science Courses – 245
Little, Paul E. (with Karl F. Kuhn) Cartoon Slides, Anyone? (Letter) – 301
Logan, James D. Use of a Puzzle to Teach Concepts of Circular Motion and Friction – 463
Lunde, Barbara K. (with James Jones) Let the Students Write the Exam – 270
Mahoney, Brother James, CFX. Static Electricity Versus the Power Supply – 345
Laser Interference by a Convex Mirror – 406
Electroscope Discharge Rate – 534
Mallette, Vincent. Doppler Effect Using a High Frequency Buzzer – 283
Mancuso, Richard V. Electronics for Speech Majors – 34
Manos, Harry. Combining Mathematics and Physics in High School – 385
Maor, Eli. (See also Metzger, Eli.), A Repertoire of S.H.M – 377
Marble, Richard A. Floating Objects (Letter) – 67
Review of *The World of Physics,* R. Hulsizer and D. Lazarus – 224
Review of J.B. Marion and R.C. Davidson, *Mathematical Preparation for General Physics* – 481
Massey, Walter E. (with Eschenbacher, Herman F.) Training Science Teachers for the Inner City: The

ICTOS Program at Brown University – 80
Review of Herman W. Pollock, *Applied Physics* – 158
Merrill, John R. Review of Robert R. Fenichel and Joseph Weizenbaum, Eds., *Computers and Computation: Readings from Scientific American* – 540
Metcalf, Harold. Electrocardiography for Freshmen – 98
Review of Robert L. Stearns, *Mechanics I - Statics, Dynamics and Kinematics* – 160
Metcalfe, H. Clark. (with John E. Williams, Frederick E. Trinklein, and Ralph W. Lefler) Would You Believe They Didn't Believe (Letter) – 298
Metzger, Eli. (See also Maor, Eli.), On D'Alembert's "Principle" – 97
Metzger, Eli. On D'Alembert's "Principle" – 97
The Geometry of the Sound Field of a Gun – 146
Meyer, Fr. Earl R. Recording Timer Tape for Interference Demonstrations – 334
Mihm, Richard J. (with Marilyn P. Milsop) One Instructional Use of the Computer – 470
Milsop, Marilyn P. (with Richard J. Mihm) One Instructional Use of the Computer – 470
Miner, Thomas D. Review of Sanborn C. Brown, F. J. Kedves, and E. J. Wenham, Ed. *Teaching Physics - An Insoluble Task?* – 287
Review of Soren Sikjaer, Ed., *Seminar on the Teaching of Physics in Schools* – 353
Moche, Dinah. Lighter Side of Teaching Physics (Letter) – 427
Mogill, A. T. To "Up" Enrollment (Letter) – 234
Science for a Precious Few (Letter) – 363
Practical Fields – 471
They Can Have Any Color They Want As Long As It s Black (Letter) – 426
Moore, James F. Beta Energy Using Modified Millikan Apparatus – 47
Moore, R. B. (with M. S. Lafleur, P. F. Hinrichsen, and P. C. Landry) The Poisson Distribution – 314
Morrison, Howard L. Jumping Jehosaphat – 150
Morrison, Philip. Something Old, Something New (Letter) – 67
Moyer, Albert E. Review of *Patient Earth*, John Harte and Robert Socolow – 223
Muster, John. Report of the Acting Executive Officer – 237
Neff, Robert F. Review of film "*Power of Ten*" – 52
Review of Laurence B. White, Jr., *Investigating Science with Paper* – 103
Nelson, James H. "Physics is Phun" Quiz – 43
Nelson, James. Student Power – 527
Netzorg, David. Rotating Vector Apparatus – 406
Nigama, U. S. Opportunity for International Cooperation (Letter) – 234
Norton, Thomas W. Backwards Clock – 401
Occhuizzo, John. Hearing the Vibrations of a Stretched Wire – 284
O'Farrell, S. Units of Weight (Letter) – 5
Paldy, Lester G. A Thirty Million Dollar Misunderstanding (Editorial) – 7
Review of the periodical *Adventures in Experimental Physics* – 353
Pasquesi, Robert J. (with Edward J. Finn and Raymond E. Thompson) The Advanced Placement Program in Physics – 391
Thompson, Raymond E. (with Edward J. Finn and Robert J. Pasquesi) The Advanced Placement Program in Physics – 391
Patton, Brainard L. A Lightning Catch (Letter) – 174
Payne, John G. Physics Just for Fun – An Individualized Course Using Harvard Project Physics – 138
Phillips, Melba. (Guest Editor) Physics in Pre-College Education Newsletter #3–326, #7–520
Piche, Gerald. Physics Teachers and Programs (Letter) – 235
Plendl, Hans S. Physics for Poets, Pianists and Philosophers – 273
Pollard, Jesse. Astronomy and the Armillary – 96
Pomilla, Frank R. (with Spergel, Martin S., Siegel, Lester and Weinstein, Robert) Review of Malvin S. Dolmatz and Harry S. Wong, *Ideas and Investigations in Science* – 51
Pope, John. Is Memorization an Assist? (Letter) – 235
Porter, Rollin D. Phenomenological Physics – Maine Township H. S. West Style – 193
Pounder, Colin. Electrical Figures – 468
Priestely, Herbert. Interrelationships of Science and Society – A High School Teacher Institute – 261
Review of Barry M. Casper and Richard J. Noer, *Revolutions in Physics* – 481
Pruden, Donald J. Velocity Measurements Outdoors with a Tape Recorder – 49
Drag Strip Timer for Extended Use – 100
Pryor, Marvin J. (Apparatus) Cyclones and Anticyclones on a Record Player Turntable – 532
Przeniczny, Zygmunt. Mercury Vapor Street Lamps – 153
A Variation of the Electric Wind Experiment – 338
Raman, V. V. Where Credit is Due: R. Hooke, B. Woodcroft, D'Alembert, *et al.* – 12
The Second Law of Motion and Newton's Equations – 136
The Leaning Tower of Pisa Experiment – 196
Review of *Resources for the History of Physics*, Stephen G. Brush editor – 538
Randall, C. A. Oops...! (Letter) – 300
Rasmussen, Steve. Review of Eugene S. Schwartz, *Overskill: The Decline of Technology in Modern Civilization* – 410
An Impulsive Reply (Letter, reply to Mario Iona) – 301
A Background to Newtonian Gravitation – 439
Reynolds, James M. Pin Hole Camera – 49
Richards, Sumner. Where Credit is Due (Letter) – 235
Rodano, Salvatore J. (with James J. D'Amario) Displaying Magnetic Forces Produced by Currents – 340
Roeder, John L. Happy Birthday (Letter) – 427
Romer, Alfred. Pith Ball Substitute – 477
Romer, Alfred. Review of *Physics: A Descriptive Analysis*, Albert J. Reed – 538
Rosenau, Sr. Mary Jo. Stumpers! - 382
Roxas, Segundo. (with Robert E. Chesley) High School Physics Curriculum Development in the Philippines – 128
Rutherford, F. James. . . . and more. (Letter) – 300
Rutledge, Delbert. (with Layman, J. W.) Neon Lamps and Static Electricity – 49
Sawyer, Earl M. The Perpetual Light (Letter) – 362
Schwob, Timothy J. Physics Teaching: An Alternate Method – 98
Scott, Douglas E. Review of G. M. Fichtenholz, *The Indefinite Integral* – 223
Scott, Samuel R. Acoustical Zone Plate – 478
Sears, Robert, Jr. Review of Steve Edwards, *Physics – A Discovery Approach* – 160
Seeger, Raymond J. Review of Stephen G. Brush and Allen L. King, *History in the Teaching of Physics* – 536
Shankland, R. S. Review of Ronald W. Clark, *Einstein – The Life and Times* – 352
Review of Loyd S. Swenson, *The Ethereal Ether: A History of the Michelson-Morley Miller Experiments 1880-1930* – 408
Shonle, John I. (with Nordick, Douglas L.) The Physics of Ski Turns – 491
Singer, Sam. Apparatus to Measure e/m: The Manufacturer Replies to Evaluation – 407
Sites, James R. Ultralow Temperature Nuclear Physics – 75

Smith, Frank A. Jr. The Frustrated Wave – 216
Smith, Norman. Bernoulli and Newton in Fluid Mechanics – 451
Smith, Robert W. Ripple Tank Projection with Improved Contrast – 533
Smith, Steven R. (with Jerry D. Wilson) A New Design to Demonstrate Newton's Third Law – 208
Sneider, Cary I. Review of Beatrice and Malcolm Gress, Editors, *Radical School Reform* – 102
A Different "Discovery" Approach – 327
Sopka, Katherine. An Apostle of Science Visits America – 369
Soxman, Kenneth A. Mini Physics at South Missouri State College – 339
Spindel, Murray. The Man-Made World (modified): Modeling Population – 335
Standler, Ronald B. (Apparatus) Magnetically Driven Sonometer – 533
Strassenburg, A. A. Report of the Executive Officer – 322, 376, 456, 498
Council on Pre-College Education (Newsletter #5) – 383
The Evolution of Physics Teaching – 509
Strobel, George L. Red Lights and Quantum Numbers – 209
Stroud, Larry (with George L. Hazelton) Three Dimensional Ray Tracing – 344
Swartz, Clifford. Summer Thoughts for Fall Reading (Editorial:) – 302
Revealed Truth by the Editor on Certain Subtle Points (Editorial) – 367
The Mystery of Mastery (Editorial) – 428
Physics – Where the Least Action Is (Editorial) – 514
Taffe, William J. Video Recording of Two-Dimensional Motion – 344
Taylor, Julius H. Tensiometer – 478
Thekaekara, Mathew P. Review of Isaac Asimov, *The Stars in Their Courses* – 160
Thompson, Raymond E. (with Edward J. Finn and Robert J. Pasquesi) The Advanced Placement Program in Physics – 391
Thomson, Malcolm M. Sundials – 117
Thumm, Walter. Questions Some Students Ask – 226, 280, 346, 384, 488, 507
Tokosh, Howard. The Klinger Blackboard Optics Kit – An Evaluation – 215
Trinklein, Frederick E. (with John E. Williams, H. Clark Metcalfe, and Ralph W. Lefler) Would You Believe They Didn't Believe? (Letter) – 298
Tuschl, Thomas E. Projector Force Table – 217
VanHise, Yvette A. A Group Effort in Physics – 272
Vermillion, Robert E. The Force on a Surface by a Stream of Falling Water – 526
Vinson, Ronnie D. Auto Braking System – 528
Walker, J. Robert. On Her Majesty's Service – 303
Walters, Virginia F. (with David D. Dreyfuss). A Quick Demonstration of Newton's Third Law – 531
Wayland, J. R. Student Research in Introductory Physics – 202
Weber, Roger K. A Poem on the Millikan Oil Drop Apparatus – 155
Weber, Robert L. Review of Philip Stehle, *Physics: The Behavior of Particles* – 162
White, John J., III. Ray Diagrams for a Virtual Object – 33
Wigley, E. J. The Technological Approach – 8
Williams, John E. (with Frederick E. Trinklein, H. Clark Metcalfe, and Ralph W. Lefler) Would You Believe They Didn't Believe? (Letter) – 298
Williams, T. Walley. The Apparatus Designer Replies – 406
Williamson, Dwight. An Illuminating Fad (Letter) – 426
Wilson, Jerry D. (with Smith, Steven R.) A New Design to Demonstrate Newton's Third Law – 208
Wilson, Jerry D. Newton's Sailboat (Letter) – 300
Wolfe, Hugh C. Weight in Newtons - Mass in Kilograms (Letter) – 5
Wood, Elizabeth A. Fun and Spirit: The Universal Relevance of Hard-Core Science – 241
Perhaps a Difference of Degree Rather Than Kind? (Letter in reply to A. T. Mogill) – 364
Surface Screening (Letter) – 455
Wright, Kenneth. Capturing the Projectile in the Monkey and Gun Demonstration – 263
Youtz, Edwin. Removing the Cloak of Mathematical Rigor – 525
Zandy, Hassan F. Review of Ben Bova, *Plasma Dynamics and Tomorrow's Technology* – 105
Zebrowski, Ernest Jr. On the Derivation of the Centripetal Acceleration Formula – 530
Ziauddin, Syed. Newton's Rings – Physics Experiments of Yesterday – 477